Investigating Psychological Trauma Among the 2010 Haiti Earthquake Survivors Who Have Relocated to Boston, Massachusetts

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Abstract

This study investigates the prevalence of post-traumatic stress disorder (PTSD) and major depressive disorder (MDD) symptoms among the 2010 Haiti earthquake survivors who have relocated to Boston, Massachusetts. It addresses the following questions:

1) Are symptoms of PTSD and MDD related to the earthquake present among survivors who have relocated to the Boston area?
2) How does this population use mental health treatment?
3) If PTSD and MDD symptoms are present, how do they relate to the earthquake-related trauma experienced by the immigrant survivors?
4) Is there an association between the severity of PTSD symptoms and the severity of MDD symptoms among the survivors?

A total of fifty earthquake survivors participated in this study. They each completed a demographic questionnaire, a trauma exposure survey, a PTSD checklist (PCL-C-Civilian version) and a Beck Depression Inventory (BDI). Those who met criteria for PTSD and MDD completed an additional questionnaire designed to investigate how they coped with their symptoms.

The results of this study indicate that 24% of the participants meet criteria for PTSD and 74% for MDD according to the cutoffs that were established based on previous research. It was found that none of those participants who met criteria for PTSD and/or MDD had consulted a mental health professional. The study also found a positive

association between the severity of PTSD diagnosis, MDD diagnosis, and certain exposures to trauma. Those who were older, lost family members and friends, or were physically injured in the earthquake scored higher on the BDI. Those participants who lost their homes, lost immediate family members and friends, or were physically injured scored higher on the PCL-C. Finally, the study results showed a strong positive correlation between PTSD and MDD symptoms among the participants. 92% of those meeting criteria for PTSD also met criteria for MDD and 32% of those meeting criteria for MDD also met criteria for PTSD.

Dedication

This thesis is dedicated to the 2010 Haiti earthquake victims and their families. This monstrous quake has undoubtedly changed the lives of its survivors for the remainder of their time on earth. However, they refuse to be broken. The strength of the Haitian people can be compared to bamboo. Like bamboo, Haitians have the resilience to overcome the most atrocious natural disasters. It was amazing to see how the study participants had not lost hope in spite of all the hardship many of them have been through since that awful event. Haitians often say where there is life there is hope. The survivors continue to hope for better days ahead. They will continue to carry on in the face of life's adversities. May they all find peace.

I also dedicate this work to my mother, Loraine Milord. She was taken too early and regretfully left with all the dreams she had for her six children. Her investment in love has been my source of resilience as I have weathered the storms of life.

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Table of Contents

Dedication v

Acknowledgements vi

List of Tables ix

List of Figures x

I. Introduction 1

II. Method 11

Participants 11

Instruments 11

Procedure 15

Quantitative Analysis 16

III. Results 18

Demographic Profile of Study Participants 18

Trauma Exposure Profile of Study Participants 18

Descriptive Statistics 19

Multivariate Linear Regression Analysis 20

Bivariate Correlation Analysis 24

lV. Discussion 27

References 35

Appendix A Demographic Questionnaire 41

Appendix B Trauma Exposure 42

Appendix C PCL-C - PTSD checklist (English) 43

Appendix D PCL-C - PTSD checklist (Kreyol) 45

Appendix E Beck Depression Inventory (English) 47

Appendix F Beck Depression Inventory (Kreyol) 50

Appendix G Follow-up Questionnaire 54

List of Tables

Table 1	Demographic profile of study participants	12
Table 2	Trauma exposure profile of study participants	19
Table 3	Descriptive statistics	20
Table 4	Correlation between MDD, PTSD, and the independent variables	22
Table 5	Model summary (MDD)	23
Table 6	ANOVA (MDD)	23
Table 7	Model summary(PTSD)	23
Table 8	ANOVA (PTSD)	24
Table 9	Words used by participants to describe how they cope with PTSD and MDD symptoms	26

List of Figures

Figure 1 Scatter Plot of PTSD versus MDD 25

Chapter I

Introduction

On January 12, 2010, an earthquake measuring a magnitude of 7.0 on the Richter scale struck Port-au-Prince, the capital and most populated city of Haiti (Brown et al., 2012; Landry et al., 2010). This massive disaster destroyed the infrastructure of Port-au-Prince and its surrounding areas and resulted in the substantial loss of lives. The death toll was over 230,000 (O'Grady et al., 2012) and more than 300,000 were injured (Landry et al., 2010) out of a population of 2,296,386 (Haitian Institute of Statistics, 2009). Post-earthquake life in the impacted areas became overwhelming; most people in the affected areas lost their homes, multiple family members, friends, and neighbors. Simultaneously, they witnessed the destruction of everything around them. Many of the survivors had to be evacuated and thousands immigrated to the United States to escape post-earthquake hardship. Those who have come to the U.S. are at high risk for traumatic stress and other mental disorders as a result of their hardship (Kilic et al., 2006). Thus, the purpose of this thesis is to answer the following questions:

- Are symptoms of post-traumatic stress disorder (PTSD) and major depressive disorder (MDD) related to the earthquake present among survivors who have relocated to the Boston area?
- How does this population use mental health treatment?
- If PTSD and MDD symptoms are present, how do they relate to the earthquake-related trauma experienced by the immigrant survivors?

- Finally, is there an association between the severity of PTSD symptoms and the severity of MDD symptoms among the survivors?

The current prevalence of PTSD in the U.S. adult population is evaluated at 3.5% and that of MDD at 7%, according to the DSM-V, (2013). Moreover, in a study conducted in Haiti with adult survivors thirty months after the earthquake, the prevalence rates of PTSD and MDD were assessed at 36.75% and 25.98% respectively (Cenat & Derivois, 2014). Thus, the current research proposal was guided by the following hypotheses: it was expected that 1) at least 30% of the immigrant survivors would meet criteria for PTSD and 20% for MDD; 2) more than half of those who meet PTSD and MDD criteria rely on traditional Haitian remedies as opposed to professional mental health treatment to cope with their symptoms, 3) those who lost at least one immediate family member (child, mother, father, brother, or sister) in the quake, were trapped in the rubble and had to be rescued, or were physically injured would show more symptoms of PTSD and MDD than the others, and finally, 4) there would prove to be a positive association between the severity of PTSD and the presence of MDD symptoms among the survivors.

The 2010 Haiti earthquake has been one of the most traumatic experiences in the history of the Haitian people. Elevated rates of psychological trauma had been documented among Haitians living in Haiti prior to the earthquake (James et al., 2012). For many of the immigrant survivors, the earthquake may have exacerbated already existing mental disorders (Raviola et al., 2012). People who experience natural disasters are at high risk for developing post-traumatic stress disorder and major depression (Dekel & Bonamo, 2013; Pietraz et al., 2012; Schneider et al., 2012; Caple-James, 2012;

Tummala-Nara & Kallivayalil, 2012; Neuner et al., 2004). A study found that 70% of the survivors in the 1988 Armenian earthquake showed post-traumatic stress symptoms (Xu & He, 2012). The Armenian earthquake's magnitude was 6.8 on the Richter scale and the number of casualties was estimated at less than 50,000. In comparison, Haiti's earthquake had a magnitude of 7.0 and an estimated 530,000 casualties, suggesting that a higher number of Haitian survivors have been exposed to significantly more trauma than the Armenians. In other populations, survivors of natural disasters with previous psychological disorders are at a high risk for poor outcomes after earthquakes (Tural et al., 2004), particularly for post-traumatic stress disorder and major depression (O'Donnell et al., 2012; James et al., 2012). It can therefore be expected that Haitian immigrant survivors who experienced trauma prior to the earthquake are at high risk for developing psychological disorders such as PTSD and MDD as a result of the earthquake.

James and colleagues (2012) have reported that hyper-vigilance, sleep difficulty, anxiety, grief, anger, drug and alcohol abuse, and social isolation have been documented among the earthquake survivors. These symptoms can be considered precursors or symptoms of psychological problems. Considering the historically tumultuous environment in Haiti, it is possible that most of these symptoms existed before the earthquake; however, they may have been exacerbated by the trauma resulting from the impact of the earthquake (WHO, 2010). Part of what may have made recovery so difficult for the immigrant survivors, beyond prior trauma, even in those who were not injured and did not lose family, is a lack of mental health awareness. The War Trauma Foundation (2010) reported one case where a Haitian earthquake survivor and his family were not physically injured. However, the father showed symptoms consistent with being severely

depressed, possibly as a result of losing his business in the earthquake. He cried constantly, lost his appetite, stopped eating, and eventually died. Had he or other family members been aware of the seriousness of mental health issues, and assuming proper mental health care were available, he could have received the proper treatment that might have saved his life.

Low household income may reinforce symptoms of PTSD. A study conducted with survivors of the Wenchuan, China, 2008 earthquake found that participants with low or no household income were more likely than those with higher income to develop PTSD (Kun et al., 2009). This same study also found that individuals who experienced a death in their family as a result of the earthquake were more likely than those who did not lose a family member to develop PTSD.

Depression is also prevalent among survivors of natural disasters. Johannesson and colleagues (2009) found in a sample of 262 survivors of the 2004 tsunami-affected communities in the Aceh Province, Indonesia, that 77% demonstrated symptoms of depression one year after the tsunami. The research does not specify whether those survivors had sought professional help for their symptoms. In a study conducted with 448 survivors of Hurricane Ike that occurred in Galveston Bay, Texas in 2008, researchers found that 16.7% met criteria for Ike-related depression symptoms and 8.9% for PTSD (Pietzak et al., 2012). That same study reported that 10.5% of the participants were suicidal at some point during the study period. In another study conducted with the 1999 Taiwan earthquake survivors, researchers compared the highly exposed survivors to the low exposed ones. Results showed that the monthly mean suicide rates among the highly exposed survivors were 42% higher during the twenty-six months following the

earthquake compared to the pre-earthquake levels. The increase was attributed to physical and emotional stress, death of relatives, financial losses, destruction of property, and exposure to threat or injury (Yang et al., 2005).

Many risk factors, including poverty, lack of access to education, political and social unrest as well as Haiti's plight with major natural disasters have made the 2010 earthquake survivors a high risk group for developing mental disorders (Raviola et al., 2012; Nicolas et al., 2010). Haiti has an estimated population of more than 9 million people with approximately 50% under the age of 20 and its estimated per capita GDP of $674.00 in 2009 makes it the poorest country in the Western Hemisphere (WHO, 2010). In comparison, Haiti's next door neighbor, the Dominican Republic has per capita GDP of $4,703.00 and the United States $47,000.00 (World Bank, 2009). The unemployment rate in Haiti is very high with rates of 49% in metropolitan areas, 37% in semi-urban areas, and 36% in rural areas; about half of the population live in extreme poverty (WHO, 2010). As a result, life expectancy is short: 61years for men and 64 for women (WHO, 2013). In comparison, life expectancy reported for Dominican Republic is 73 years for men and 74 years and for Cuba 77 years for men and 80 years (WHO, 2103). A majority of the population of Haiti does not have access to education with 72% having only a primary school education and only 1% a university level of education (James et al., 2012; Cultural Consultation Service & Department of Mental Health and Substance Abuse, 2010). Haiti has been politically unstable since its independence in 1804; however, some of its most unstable times have been within the last thirty years, during which the country has experienced tremendous political violence, human rights violations, and civil unrest (Nicolas et al, 2010).

In addition to the 2010 earthquake, Haiti has faced many significant natural disasters over the past twenty years. The island is located in the middle of the hurricane belt and is exposed to some of the fiercest storms during the hurricane season, which runs approximately from June to November every year. These storms have caused significant damage from flooding, landslides, and coastal surges, resulting in major human and property devastations (World Bank, 2008). Examples of major storms that have hit the country and caused significant losses over the past twenty years include Hurricanes Gordon (1994), Georges (1998), Jeanne (2004), Yvan (2004), Dennis (2005), Gustav and Hanna (2008), and Tomas (2010). Collectively, these storms killed thousands of people, left thousands of others without homes, and caused millions of dollars of damages (Weather Undergound, 2014). As it was observed after the 2010 earthquake, the government was overwhelmed and, as a result, was ineffective in dealing with these types of traumatizing events.

Mental Health Resource Scarcity

There are only two psychiatric hospitals in all of Haiti, and both are located in Port-au-Prince, the capital. Together, they offer a total of only 180 beds to serve the whole country. To make things worse, these facilities are inaccessible to the majority of the population due to their distance from the rest of the country (WHO, 2011). These hospitals are also notorious for their lack of resources due to the absence of government funding (Cultural Consultation Service & Department of Mental Health and Substance Abuse, 2010; WHO, 2011). Mental health care is not a priority in Haiti; there is no officially approved mental health policy and mental health is not addressed in the

national health policy (Haitian Mental Health Summit, 2010). The Haitian government spends a mere 0.61% of its overall health budget on mental health (WHO, 2011). In comparison, Egypt spends about 10% of its health budget on mental health, the US and Australia about 6%; and France about 5% (Kliff, 2012). Proportionally, Haitian citizens have very limited options for their mental health care. Typically, Haitians with mental disorders are either locked in patient wards or out wandering in the streets (Raviola et al., 2012).

Cultural Beliefs

Cultural beliefs have tremendous influence on the way people respond to mental disorders (Asmal et al., 2011; Nicolas et al., 2006; Endrawes et al., 2007; Chen & Mak, 2008). Research shows that some groups share the Haitian skepticism of mental health treatment. For example, it has been found that Egyptians share many similar cultural beliefs with Haitians, believing that mental disorders are caused by malevolent spirits. Such beliefs feed collective doubt about the effectiveness of treatment and, as a result, compel people to turn to traditional healing practices such as the Zar cult to treat their mental disorders (Endrawes et al., 2007).

In an effort to provide culturally-sensitive health care to citizens of different cultures, a case study was conducted with Haitian immigrants in a rural community in Delaware. The study consisted of a series of interviews conducted with Haitians in that community over a three-month period. One participant described a voodoo priest as a gifted individual who can heal somebody by saying a prayer or through performing a special ceremony. Another study participant told the story of a Haitian acquaintance who

had a stroke and his family concluded that it was caused by a curse from an enemy. This conclusion led the family to seek the assistance of a voodoo healer for the proper care or a cure (Dosher & Johnson, 2004).

In Haitian culture, being diagnosed with a mental health disorder is perceived negatively and may stain a family name for generations, bringing shame to both the affected individual and to his/her family (Gopaul-McNicol et al., 1998). It is commonly accepted in Haitian culture or environment that an individual who suffers from a mental disorder is considered the victim of the spirit of a deceased family member, or the victim of a curse from the loas. The loas represent the spirits of African ancestors, deceased family members, or even biblical figures (Desrosiers & St. Fleurose, 2002). Beyond mental disorder, many other good or bad situations are also attributed to the loa who is perceived as a force more powerful than any human being.

Understanding cultural beliefs among populations is important in determining services because the individual's beliefs about mental disorder and mental health care may be inconsistent (Endrawes et al., 2007; Morrison & Thornton, 1999). Being aware of these cultural beliefs will further help to understand the clients' needs and facilitate more appropriate care (Endrawes et al., 2007). According to Stone and Finlay (2009), what is perceived as disorder may be different depending on the culture, and the response to that disorder, including treatment, may be different as well.

Impact of Stigma

While there are no known studies that document the impact of stigma on Haitians' perception of mental health care, research performed in other communities has

documented the impact of stigma on mental health treatment. In general, most of these studies show that stigma interferes with seeking or benefiting from mental health treatment. If that is true of Haitians, stigma may have a significant impact on how Haiti's earthquake immigrant survivors perceive mental disorder and mental health care.

A qualitative study was conducted with thirty-four low-income Black mental health consumers in the San Francisco area. Most participants initially avoided or delayed treatment due to concerns about stigma. Through their analysis of the qualitative interviews, the researchers identified three themes related to stigma: stigma as a barrier to seeking mental health treatment; exposure to stigmatizing beliefs about mental health treatment; and stigma as an ongoing treatment experience. In the case of stigma as a barrier to treatment, an overwhelming 76% of participants reported that stigma was one of the major factors preventing them from seeking voluntary mental health treatment (Alvidrez et al., 2008).

Another qualitative study (Knifton, 2012) was conducted with a diverse group of eighty-seven mental health consumers including Blacks, Pakistanis, Indians and Chinese living in Scotland, UK. Results revealed that all four groups experienced significant levels of stigma from their communities and that their families were exposed to substantial associative stigma. One theme found to be consistent among all the minority groups was shame associated with mental illness. This shame was also shared by members of their families who, as a result, were reluctant to provide their support and encouragement to seek professional help. Knifton's research also revealed several other themes that may be similar or close to the experience and cultural belief of the Haitian earthquake survivors. For example, many of the study participants reported that mental

health problems are not considered as disorders in their communities. They believe that mental health issues are caused by such factors as the 'will of God', 'inheritance', 'black magic', or 'certain spirits'. Therefore, they are less likely to expect Western-type treatment and professional help to provide a cure or relief.

Researchers have reported that self-stigma and public stigma are deterrents to the diagnosis and treatment of mental disorder (Vogel et al., 2013; Gibbons et al., 2012; Vogel et al., 2010; Angermeyer & Matschinger, 2003). In a study conducted with 491 participants in the Midwestern United States, researchers examined attitudes toward group counseling and found that public stigma and self-stigma explained 52% of the variance in attitudes toward seeking help (Vogel et al., 2010). These findings support the idea that public stigma might lead to internalization of the stigma and decreased positive attitudes toward seeking help. In another study conducted with 1,312 Australian adults to investigate stigma about depression and its impact on help-seeking behaviors, it was concluded that self-stigma was significantly associated with reluctance to seek professional help (Barney et al., 2005).

This study predicted that the analysis of the data collected would show that at least 30% of the immigrant survivors living in the Boston area would present PTSD symptoms and that 20% would present MDD symptoms related to the 2010 Haiti earthquake. It was also predicted that a majority of those who present these symptoms would rely on traditional Haitian remedies instead of professional mental health treatment. In addition, the data was expected to show a relationship between PTSD and MDD symptoms among the study participants.

Chapter II

Method

This study assessed prevalence of PTSD and MDD symptoms among the 2010 Haiti earthquake survivors and determined if the severity of their symptoms was related to the level of trauma they experienced as a result of the quake. This research also examined the use of mental health treatment among those with trauma symptoms. The methods used to accomplish this are described below.

Participants

This study sample was comprised of fifty participants, all of whom are Haitian adults who were in Port-au-Prince at the time of the earthquake. The participants were contacted through Haitian churches and other Haitian community centers in the Boston area. To be eligible for participation, participants had to be between the ages of eighteen and seventy-five with no prior history of mental disorder.

Instruments

A short demographic questionnaire (Appendix A) written in Haitian-Creole was used to allow participants to self-report age, gender, marital status, and highest level of education completed. The demographic profile of study participants has been summarized (Table 1).

Table 1

Demographic profile of study participants

Variable	Level	N	%
Gender	Male	21	42%
	Female	29	58%
Total		50	
Marital Status	Single	13	26%
	Married	32	64%
	Divorced	0	0%
	Separated	1	2%
	Widowed	4	8%
Total		50	
Education	Elementary and below	14	28%
	Junior High	15	30%
	Senior High	8	16%
	Associate Degree	7	14%
	Bachelor's Degree	5	10%
	Master's Degree	1	2%
	Doctoral	0	0%
Total		50	

A trauma exposure survey (Appendix B) available in English and Haitian Creole was used to capture each participant's exposure to trauma during and after the earthquake. It contained eleven questions designed to capture the participant's experience with the earthquake. A summary of the participants' responses can be found in the Results section of this report (Table 2).

The Post-Traumatic Stress Disorder Checklist – Civilian Version (PCL-C – Appendix C) was used for screening for PTSD. It was originally designed for use with veterans and was later adapted for use with civilians as the PCL-C. Developed originally by Frank Weathers and his associates in 1993, it was revised in 1994 to correspond to the DSM-IV criteria (Weathers et al., 1999). It is one of the most widely-used self-report measures for the general assessment and screening of PTSD (Weathers et al., 1999). It contains seventeen items inquiring about the specific symptoms of PTSD, with responses ranging from 1(not at all) to 5 (extremely). The total score is computed by adding up all the scores. The range of scores on the PCL-C is 17-85 with scores higher than 50 indicating likelihood of the diagnosis of PTSD. The original psychometrics of this measure were established in combat veterans; internal consistency in that sample was α =0.97 and its test-retest reliability r = 0.96. It was also found that with a cutoff score of 50 sensitivity was 0.82 and specificity was 0.84 (Weathers et al., 1993). Psychometric properties were further examined in a non-clinical sample of 471 undergraduate students. It was found that the PLC-C demonstrated excellent internal consistency (alpha=0.94, n=471) and good retest reliability (r=66, n=321) two weeks after the initial administration (Conybare et al., 2012). Other researchers have also presented evidence of the validity and reliability of the PCL-C using cutoff scores ranging from 37 to 50 (Blanchard et al., 1996; Karstoft et al., 2013). This study used a cutoff score of 50 to establish likelihood of the diagnosis of PTSD.

The Haitian Creole-translated version of the PCL-C (Appendix D) used for this study was also used by Castagna Lacet, a doctoral candidate in social work (Lacet, 2012). However, no validity data had been reported. Therefore, prior to testing the study

hypotheses, reliability and validity were examined in the current sample. Specifically, the inter-correlations between scores on the translated PCL-C and scores on the Beck Depression Inventory (BDI) were examined because it is expected that individuals with more PTSD symptoms also present more depression symptoms. My examination of the correlation between the scores on the translated PCL-C and the BDI produced a coefficient of .71, which is evidence to support the validity of the translated PCL-C.

The Beck Depression Inventory (BDI) was used to measure MDD symptoms (see Appendix E). It is among the most widely used measures of depression and it makes it easy to quantify symptoms and assess them objectively (Schaefer et al., 1985). The original version of the BDI was developed in 1961 and revised in 1978 (Beck et al., 1978). It has been used to assess depression in both psychiatric and non-psychiatric populations (Beck et al., 1988). It contains 21 items inquiring about symptoms of depression such as fatigue and irritability and each item consists of a list of four statements from which respondents are asked to select the one that is the most applicable for them. The ratings are summed up to calculate total depression scores which can range from zero to sixty-three (Beck et al., 1978). According to guidelines distributed by the Center for Cognitive Therapy, a score between 10 and 18 signals mild to moderate depression, 19 – 29 suggests moderate to severe depression, and a score over 30 signals severe depression (Beck et al., 1988). The internal consistencies of both the original and revised versions of the BDI were established through research conducted with 598 in-patients who were administered the 1961 version and with 248 outpatients who were self-administered the 1978 version. The alpha coefficient for the 1961 version was found to be 0.88 and the 1978 version was 0.86. That study concluded that the internal

consistencies of both versions were comparable (Beck et., 1978). Beck and his colleagues (1988) conducted another study in which they reviewed the BDI's psychometric properties with psychiatric and non-psychiatric samples for the years 1961 through 1986. Their review yielded a mean coefficient of 0.86 for psychiatric patients and 0.81 for non-psychiatric participants (Beck et al., 1988). Many other studies have shown the reliability and validity of the BDI to be well established (Lee et al., 1991; Shin et al., 1993).

The Haitian Creole version of the BDI (Appendix F) used in this study was developed by the Social & Transcultural Psychiatry – McGill University and published in 2013 after its reliability was established through a study conducted in Haiti with thirty-one Haitian adults (Kaiser et al., 2013). The authors explained that a firm specializing in transcultural translation of mental health instruments was employed to adapt the BDI into Haitian Creole. This approach used a series of translations and back translations, with a focus on comprehensibility, acceptability, relevance, and completeness of items. In the end, the resulting measure achieved high internal consistency and reliability at 0.89 and provided data that are both comparable with other settings and locally valid and comprehensible (Kaiser et al., 2013).

Participants who scored above the cutoffs for PTSD and/or MDD symptoms on the BDI and/or the PCL-C were asked to complete a follow-up questionnaire (Appendix G) containing two questions formulated to determine whether they have used traditional Haitian remedies or consulted a mental health professional for their treatment.

Procedure

Potential participants were contacted and the purpose of this study was explained to them. They were asked to participate in a research project aiming to understand the impact of the 2010 earthquake on survivor health and well-being. All study participants were required to sign a consent form agreeing that their information would be used for this study. They were also assured that their information would be kept confidential and properly discarded after the completion of this project. It was explained to them that having such data available would contribute to making better health care available for Haitians in general. As an incentive, each subject was offered a $10.00 international phone card for his or her participation, which included completing the screening process and participating in the larger investigation. Only those participants who completed the whole study received the $10.00 incentive.

Prior to collecting any data, I recruited and trained a research assistant whose native language is Haitian Creole, is fluent in English, and is also familiar with the Haitian community. I and my trained assistant (research team) sat down with each participant and explained each question on the questionnaires in order to promote consistent understanding of the questions. We also checked and ensured that each participant's response was properly recorded.

Quantitative Analysis

The data collected were entered into Excel spreadsheets. They were tabulated and checked prior to statistical analyses to test the hypotheses. All statistical analyses were carried out using the SPSS V. 22. Descriptive statistics on all data were examined. To test

hypotheses 1, which predicted that at least 30% of the immigrant survivors would meet criteria for PTSD and 20% for MDD, frequency of participants who meet criteria for PTSD and MDD were examined. To test hypotheses 2, which predicted that more than half of those who meet PTSD and MDD criteria rely on traditional Haitian remedies as opposed to professional mental health treatment, the percentage of those who use traditional Haitian remedies versus mental health professionals were calculated. To test hypotheses 3, which predicted that those with significant trauma exposure would show more symptoms of PTSD and MDD, multivariate linear regression analysis was conducted to assess the effects of each variable on PTSD and MDD symptoms. Bivariate correlation analysis was used to test hypotheses 4, which predicted a positive association between the severity of PTSD and MDD symptoms among the study participants.

Chapter III

Results

This chapter summarizes the results of my quantitative and statistical analyses of the current study which investigated psychological trauma among the 2010 Haiti earthquake survivors.

Demographic Profile of Study Participants

The demographic data collected from study participants were tabulated as shown in Table 1, showing that the fifty study participants included 60% females and 40% males. 68% of the participants were married, 22% single, 8% widowed and 2% separated. 74% of the participants reported an educational level below college.

Trauma Exposure Profile of Study Participants

Table 2 summarizes the extent to which the participants were exposed to trauma, according to the eleven questions that were asked in the trauma exposure survey. Based on their responses, the following traumas were more heavily experienced by the participants: felt fear and horror (98%), lost a friend (90%), witnessed death (94%), and witnessed atrocities (98%).

Table 2

Trauma exposure profile of study participants

Variable	N	%
Felt fear, horror or helplessness during the earthquake	49	98%
Physically injured in the earthquake	10	20%
Lost an immediate family member in the earthquake	30	60%
Lost a friend in the earthquake	45	90%
Lost my home in the earthquake	24	48%
Lost my business in the earthquake	7	14%
Witnessed death in the earthquake	47	94%
Lost my job after the earthquake	24	48%
Was trapped in the rubble and had to be rescued	12	24%
Witnessed atrocity in the earthquake	49	98%
Suffered mental problem before the earthquake	0	0%

Descriptive Statistics

Table 3 shows the descriptive statistics on the data collected. The mean age of the study participants was 44.66 years with a standard deviation of about 14.57 years. The mean score for PTSD was 39.10 with a standard deviation of 12.65. Only 24% of the participants met criteria for PTSD based on the cutoff score of 50 that was established. The mean score for MDD was 17.30 with a standard deviation of 12.09. 74% of the participants met criteria for MDD based on a cutoff score starting at 10 for mild depression.

Table 3

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	50	18	74	44.66	14.575
Gender	50	0	1	0.58	0.499
Married	50	0	1	0.64	0.485
College	50	0	1	0.26	0.443
Injured	50	0	1	0.2	0.404
Lost family members	50	0	1	0.6	0.495
Trapped in rubble	50	0	1	0.24	0.431
PTSD	50	17	63	39.1	12.65
Meet PTSD criteria	50	0	1	0.24	0.431
MDD	50	0	41	17.3	12.094
Meet MDD criteria	50	0	1	0.74	0.443
Felt horror during earthquake	50	0	1	0.98	0.141
Lost friend in earthquake	50	0	1	0.9	0.303
Lost home in earthquake	50	0	1	0.48	0.505
Lost business in earthquake	50	0	1	0.14	0.351
Witnessed death in earthquake	50	0	1	0.94	0.24
Lost job due to earthquake	50	0	1	0.48	0.505
Witnessed atrocity during earthquake	50	0	1	0.98	0.141

Multivariate Linear Regression Analysis

Tables 4-8 display the results of multivariate linear regression analysis for MDD and PTSD as dependent variables and the following fourteen independent variables: age, gender, marital status, education, physically injured, lost a family member, trapped in rubbles, felt horror, lost a friend, lost a home, lost a business, witnessed death, lost job, and witnessed atrocities. Separate analyses were conducted for PTSD and MDD as dependent variables, since the version of SPSS used for this analysis did not allow the

input of two dependent variables at the same time. However, the results would not have been different even if both dependents were analyzed together.

Table 4 shows the results for MDD versus the fourteen independent variables and those for PTSD versus the same independent variables. Those participants who were older, lost family and friends, lost their homes, or were physically injured in the earthquake show the highest positive correlations with MDD. On the other hand, the variable college shows a relatively high negative correlation (-.240) with MDD. Those participants who lost their homes, lost family and friends, or were physically injured in the earthquake show the highest positive correlations with PTSD. On the other hand, the variable college shows a relatively high negative correlation (-.260) with PTSD.

Table 5 shows the model summary for the correlation between MDD and the independent variables. This helps to determine how well the regression model fits the data. The value of R, which is one measure of the quality of the prediction of the dependent variable MDD, is .679. It indicates a good level of prediction. Based on the R square value of .461, our independent variables explain 46.1% of our dependent variable MDD. This is also supported by the ANOVA table below (Table 6) which shows that the independent variables statistically significantly predict the dependent variable MDD (Sig. F change=.034).

Table 7, which is the model summary for PTSD, helps to determine how well the regression model fits the data. The value of R, which is one measure of the quality of the prediction of the dependent variable MDD, is .592. This indicates a reasonable level of prediction. Based on the R square value of .350, our 14 independent variables explain 35% of our dependent variable PTSD. The ANOVA table (Table 8) shows that the

fourteen independent variables do not statistically significantly predict the dependent variable PTSD (Sig. F change=.231).

Table 4

Correlations between MDD, PTSD, and the independent variables

Variable	MDD Correlation	Significance	PTSD Correlation	Significance
Age	0.340	0.008	0.082	0.285
Gender	-0.185	0.099	-0.022	0.439
Married	0.144	0.159	-0.001	0.498
College	-0.240	0.047	-0.26	0.034
Injured	0.284	0.023	0.236	0.05
Lost family member in earthquake	0.358	0.005	0.293	0.019
Trapped in rubble	0.228	0.055	0.212	0.069
Felt horror during earthquake	0.206	0.075	0.184	0.101
Lost friend in earthquake	0.404	0.002	0.248	0.042
Lost home in earthquake	0.270	0.029	0.331	0.009
Lost business in earthquake	0.052	0.359	-0.054	0.355
Witnessed death in earthquake	-0.043	0.384	0.076	0.3
Lost job due to earthquake	0.049	0.366	-0.024	0.435
Witnessed atrocity during earthquake	0.171	0.118	0.218	0.064

Table 5

Model Summary (MDD)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.679[a]	.461	.245	10.505

a. Predictors: Witnessed atrocity during earthquake, Felt horror during earthquake, Lost friend in earthquake, Injured in earthquake, Lost business in earthquake, Lost job due to earthquake, College, Married, Gender, Trapped in ,rubble, Lost family member, Age, Lost home in earthquake, Witnessed death in earthquake

Table 6

ANOVA[a] (MDD)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3303.827	14	235.988	2.138	.034[b]
	Residual	3862.673	35	110.362		
	Total	7166.500	49			

Table 7

Model Summary (PTSD)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.592[a]	.350	.090	12.065

a. Predictors: (Constant), Witnessed atrocity, Felt horror during earthquake, Lost friend in earthquake, Injured in earthquake, Lost business in earthquake, Lost job due to earthquake, College, Married, Gender, Trapped in rubble, Lost family member, Age, Lost home in earthquake, Witnessed death in earthquake

Table 8

ANOVA[a] (PTSD)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2745.434	14	196.102	1.347	.231[b]
	Residual	5095.066	35	145.573		
	Total	7840.500	49			

a. Dependent Variable: PTSD

b. Predictors: (Constant), Witnessed atrocity, Felt horror during earthquake, Lost friend in earthquake, Injured in earthquake, Lost business in earthquake, Lost job due to earthquake, College, Married, Gender, Trapped in rubble, Lost family member, Age, Lost home in earthquake, Witnessed death in earthquake

Bivariate Correlation Analysis

A bivariate correlation analysis was performed to assess the association between PTSD and MDD. PTSD and MDD scores were highly related, $r = .71$, $p < .0001$. The strong positive correlation is also illustrated in the scatter plot below (Figure 1).

Table 9 summarizes the reported coping mechanisms of the PTSD and MDD symptoms of the participants. The words and expressions used by those study participants to describe how they cope with their mental health issues are included in the table as well.

None of those participants who met the criteria for PTSD and/or MDD have consulted a professional mental health care provider. They have relied mostly on home remedies and other traditional and cultural belief systems to cope with their symptoms.

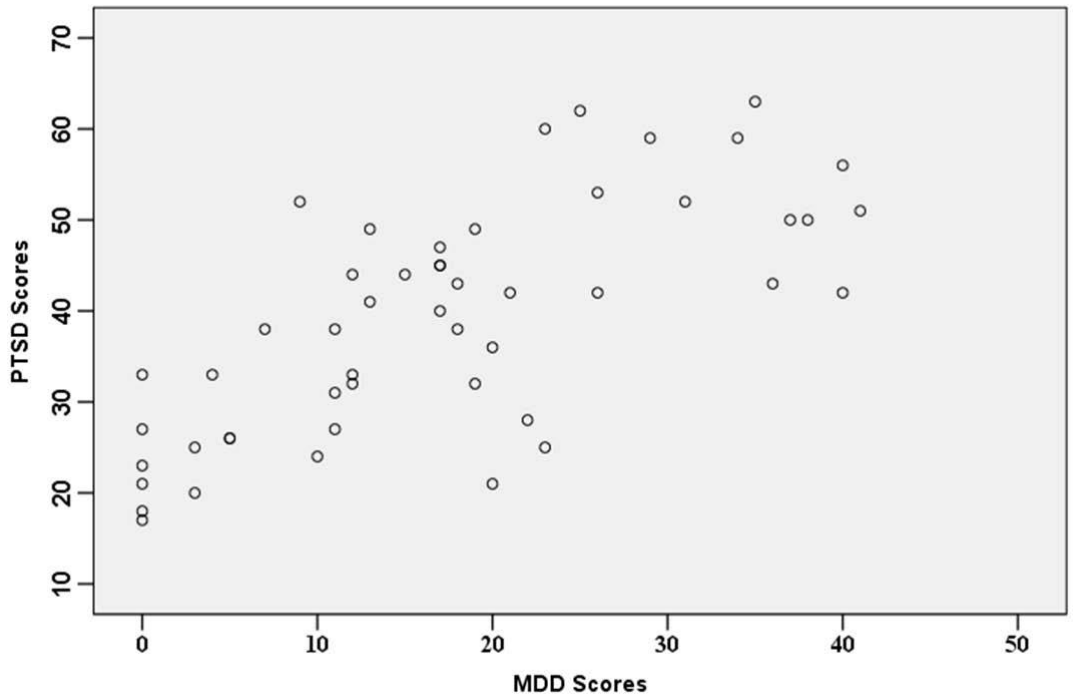

Figure 1. Scatter plot of PTSD score versus MDD scores (N=50). It shows a positive correlation between the two variables.

Table 9

• Rely on emotional support of family and friends when times are difficult
• Focus on my children
• I am not sure I can say I have coped with it because I am always suffering. I just don't have a choice
• I don't see a professional because I am afraid that people would think I am crazy
• I actively participate in church services and have found that helpful
• Praying has been helpful
• I take herbal teas to calm me down
• I take over the counter medication
• I take sleeping pills
• I find that working is very helpful
• Volunteer to clean the church
• I regularly visit sick people
• I send money to Haiti to help the less fortunate
• I sometimes pick up extra shifts at work to keep myself occupied
• I find that talking to other earthquake survivors can be very helpful as we share the same experiences.
• I drink alcohol to relax in difficult times
• I communicate regularly with relatives in Haiti
• I don't see mental health professionals because I don't believe they can really help me.
• It is too shameful to seek mental health treatment

Chapter IV

Discussion

The goal of this study was to investigate psychological trauma and depression among the 2010 Haiti earthquake survivors who have relocated to Boston, Massachusetts. This study explored whether PTSD and MDD symptoms related to the earthquake were present among those survivors. It was hypothesized that at least 30% of the survivors would meet criteria for PTSD and 20% for MDD. Out of the fifty adult survivors surveyed for this study, twelve (or 24%) met criteria for PTSD and thirty-seven (or 74%) met criteria for MDD based on the cutoffs that were established. It should be noted that the MDD symptoms cutoffs for the current study are segregated into three categories, according to guidelines distributed by the Center for Cognitive Therapy (Beck et al., 1978): mild to moderate, moderate to severe and severe depression. According to these guidelines, out of the 74% that met general MDD criteria, 32% met criteria for mild to moderate depression; 24% for moderate to severe, and 18% for severe.

The 24% finding for PTSD is slightly lower than the 30% that was predicted. It is also lower than the 36.75% rate reported by Cenat and Derivois (2014) in their study of a sample of adult survivors living in Haiti thirty months after the Haiti earthquake. On the other hand, the 24% finding is higher than that reported for the study conducted with the 448 survivors of the Hurricane Ike in Galveston Bay, Texas in 2008, where researchers reported a PTSD rate of 8.9% four years after the event (Pietzak et al., 2012). It is

important to note, however, that this population has a better support system than the Haiti earthquake survivors.

Additionally, the 74% finding for MDD is significantly above the 20% predicted. This high MDD finding can be explained in light of many factors, considering the context in which the survivors have been living since the earthquake. In the immediate days after the earthquake most of them were forced to live on the streets while their houses had collapsed with family members in the rubbles. The survivors talked about sleeping and living in horrendous conditions that still haunt their minds today. One study participant talked about her sister still being under the rubble. Others reported witnessing the bodies of family members and friends buried in inappropriate conditions. In the Haitian culture, providing a proper burial ceremony is very important to assure the well-being of the deceased's spirit in order to avoid being haunted by their unhappy disembodied soul (WHO, 2010). Many of the study participants feel guilty for surviving the earthquake while some of of their loved ones did not make it. Life may have been better for them here, others back home are still suffereing and living in deplorable conditions. When the survivors finally arrived in Boston, they had to adjust to a new culture, including a new language and a different climate. While life may be better for them in Boston, it comes with a lot of stress. On the other hand, the 74% MDD finding is consistent with the study conducted by Johannesson and colleagues (2009) with 262 survivors of the 2004 tsunami-affected communities in the Aceh Province of Indonesia. In that case, 77% of the survivors were reported to have demonstrated symptoms of depression one year after the tsunami.

This study also examined how those with PTSD and MDD symptoms use mental health treatment. It was predicted that more than half of those who meet criteria for PTSD and MDD rely on traditional Haitian remedies instead of professional mental health treatment.The results of this study show that none of those who met criteria for PTSD and/or MDD consulted a professional mental health provider for treatment.This finding overwhelmingly supports hypothesis 2 of this study, which predicted that more than half of those who meet criteria for PTSD and MDD would not seek professional mental health treatment. At the same time, the finding was somewhat troubling, considering that many of the participants showed likelihood of severe PTSD and MDD diagnosis.

Due in part to cultural beliefs, stigmas, and other factors, most of the immigrant survivors had very limited experience with mental health care when the earthquake hit or prior to coming to the U.S. For instance, stigma may perpetuate traditional beliefs about how they construe mental disorder. Consequently, immigrant survivors who potentially suffer from mental disorder might prefer to avoid treatment rather than expose themselves and their families to discrimination and labeling. Considering the cultural context in which the immigrant survivors lived in Haiti, it seems that their attitude about seeking mental health care would have been negatively affected by public stigma and self-stigma.These factors might have contributed to their preference for alternative modes of treatment even after coming to the U.S.They may not be aware of the availability of such treatments in the U.S. or may simply not be interested in seeking professional help.

In addition, cultural beliefs about the nature of mental disorders in Haitian culture might have forced many iummigrant survivors to learn to incorporate various strategies to help them cope with their mental health problems. Many Haitians typically combine

religion, spirituality, herbal medicine, and rituals to cope with their mental disorders (O'Grady et al., 2012). This is in line with the words and expressions used by the participants in this study to describe how they cope with their mental health symptoms. The most common words and expressions were: I'm afraid people might think I'm crazy; I take herbal tea; I take over-the-counter medications to calm me down and help me sleep; I use my family network as a support system; I don't have time for therapy; I keep myself busy with work and church activities; I don't believe in mental health care; and I don't think professional treatment will really help me.

Where PTSD and MDD symptoms are present, this study intended to assess how they relate to the earthquake-related trauma experienced by the survivors. It was predicted that those who lost at least one immediate family member (child, mother, father, brother, or sister) in the quake, were trapped in the rubble, or were physically injured would show more symptoms of PTSD and MDD than the other survivors who did not experience similar trauma. The results of this study partially supported this prediction. In general, those three traumatic experiences showed high positive correlations with PTSD and MDD diagnosis, but other factors such as age, loss of friends, and loss of homes showed relatively significant correlations with PTSD and MDD as well. The finding of a high correlation between the loss of a family member and PTSD diagnosis is in line with the result of the study conducted with the survivors of the 2008 Wenchuan, China earthquake, which reported that individuals who experienced a death in their family as a result of the earthquake were more likely than those who did not lose a family member to develop PTSD (Kun et al., 2009).

Finally, this study aimed to find out if there was a positive association between the severity of PTSD and that of MDD symptoms among the survivors. The results yielded a coefficient of 0.71 which supports a strong positive correlation.This result is supported by other findings. Symptoms of PTSD and MDD frequently co-occur (Au, et al., 2012). A study was conducted to examine the prevalence of PTSD and comorbid depression fourteen months after the 1999 earthquake in Turkey.The study was conducted with 530 survivors from the quake's epicenter and found that 68% of the survivors who met criteria for PTSD also met criteria for MDD (Kilic et al., 2006). In another study conducted to examine the patterns of PTSD and MDD symptoms after sexual assault, self-reported PTSD and MDD symptoms among 119 female sexual assault survivors were analyzed (Au et al., 2012). The data were organized into four subgroups: low, low-moderate, high-moderate, and severe levels of both PTSD and MDD symptoms. It was reported that within each subgroup, PTSD symptom severity consistently co-occurred with comparable depression symptom severity. In other words, the data showed no discordant PTSD and depression symptoms within the subgroups.

The immigrant survivors who have relocated to the Boston area over the years since the earthquake were living in Haiti and have most likely been subject to multiple risk factors. Moreover, other stressors they have faced as new immigrants in the Boston area may have added additional exposure. They have reported to have left close family members behind and, as a result, have lost their traditional family support system. Others who had better social and economic standings in Haiti before the earthquake expressed dissatisfaction with their current situation in the United States.That may have a negative impact on their emotional well-being. In a study done to assess the effects of relocation

after the 1999 earthquakes in Turkey, it was concluded that social network disruption caused by temporary or permanent relocation or migration after traumas has shown to negatively affect psychiatric outcomes (Kilic et al., 2006).

In conclusion, by surveying a sample of the Haiti earthquake survivors who have immigrated to the Boston area, it was possible to determine the prevalence of PTSD and MDD among them, their use of mental health care, and their exposure to trauma. The collected data made it possible to analyze the relationship between PTSD and MDD symptoms and their relationship to earthquake-related trauma as reported by the survey participants. There is limited existing research focused on the impact of trauma exposure among Haitian earthquake survivors who have relocated to the U.S. The findings of this study demonstrate the need for more cross-cultural studies and, as pointed out by Ida (2007), the U.S. health care system needs to develop services that are accessible and culturally relevant. For example, 24% of this study participants met criteria for PTSD and 74% for MDD, yet none has sought professional help. This is partly due to the scarcity of mental health treatment in Haiti where they lived before they relocated to Boston. Most of them may have never met a mental health care provider and, therefore, may not be ready, comfortable, or safe discussing their mental health symptoms and feelings with strangers. It is important that a Western health care provider serving this population be aware of this background. This study is useful because it will help to illuminate the complex and multifaceted ways through which Haitians view mental health and to serve as a resource that can help them better understand how they can benefit from mental health care. It will also shed light on the reasons why survivors now living in the Boston area who show psychological symptoms may be reluctant to seek professional treatment.

Study Limitations

This study had several limitations that should be taken into account. First, because most of the study participants were recruited through Haitian churches and community centers, it is possible that the sample might not have been random enough to produce a good representation of the targeted population. It cannot be assumed that all immigrant survivors belong to churches or visit community centers. Two particular actions were taken as an effort to diversify the sampling. First, only one member per family and/or household was surveyed to avoid including survivors with potentially similar experiences and feelings. Secondly, a conscious effort was made to recruit candidates out of several churches and community centers within the greater Boston areas. Another limitation of this study is that it was conducted with only fifty immigrant survivors living in the greater Boston communities. A larger sample size might have generated more diversified data which better reflect the psychological conditions of the earthquake survivors. A further limitation of this study is that the translated PCL-C used to assess PTSD symptoms did not have validated cutoff scores for Haitian populations. In general, there is a scarcity of validated instruments to conduct these types of studies in Haitian Creole . In an effort to mitigate this shortcoming, prior to testing the study hypotheses , reliability and validity were examined in the study sample. However, this limitation should still be taken into consideration.

Finally, this study did not thoroughly investigate the earthquake survivors for pre-existing mental disorders. The trauma exposure questionnaire required potential participants to report the existence of previously diagnosed mental disorders, but it is possible that some of the participants did not reveal their past mental issues. It is further

possible that certain participants' pre-earthquake disorders were never diagnosed by a professional. It is therefore possible that some of the symptoms reported by the study participants were not entirely due to the earthquake and might have been present prior to that.

The results of this study should be interpreted in light of the above-discussed limitations. Studies that produce results which are more representative of the Haiti earthquake survivors living in the greater Boston communities are needed. Regardless of its limitations, the findings of this study are important and useful in raising the awareness of health care providers who work with Haitian earthquake survivors who may not be forthcoming about their mental health symptoms. The study shows that they do not readily disclose or acknowledge the presence of psychological symptoms. Exploration of those symptoms is crucial so that appropriate referrals can be initiated if deemed necessary.

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Appendix A

Demographic Questionnaire

English/Kreyol

1. What is your name/kouman ou rele?_____

2. What is your age/Ki laj ou?_____

3. Gender/Sèks? a. Female/Fi b. Male/Gason

4. What is your marital status/Eta sivil?

- Single/Pa janm marye
- Married/Marye
- Divorce/Divose
- Separated/Separe
- Widow/Widower/Vèf

5. Education level/Nivo edikasyon:

- Elementary/Klas elemantè
- Junior High/Juniò Segondè
- Senior High/Seniò Segondè
- Associate degree/Asociate degre
- Bachelor's degree/ Degre bakaloreya
- Master's degree/Metriz
- Ph.D./Doctora

6. Had you ever been diagnosed with a mental disorder before the earthquake? Yes/No
Avan tranbleman te a, eske yo te jam jwen ou gen maladi mantal ? Wi/Non

Appendix B

Trauma Exposure

English/Kreyol

Did you feel fear, horror or helplessness during the earthquake?	Yes	No
Ou te santi w pe anpil ou byen dezespere lan trambleman te a ?	Wi	Non
Were you physically injured in the earthquake?	Yes	No
Ou te blese lan tranbleman te a?	Wi	Non
Did you lose one immediate family member in the quake	Yes	No
Ou pedi yon moun lan fanmi w le tranbleman te a?	Wi	Non
Did you lose a friend?	Yes	No
Ou te pedi zanmi lan tranbleman te a?	Wi	Non
Did you lose your home?	Yes	No
Ou te pedi kay ou lan tranbleman te a?	Wi	Non
Did you lose a business?	Yes	No
Ou te pedi yon bisniss lan tranbleman te a?	Wi	Non
Did you witness death?	Yes	No
Ou te we moun mouri lan tranbleman te a?	Wi	Non
Did you lose your job?	Yes	No
Ou te pedi travay ou lan tranbleman te a?	Wi	Non
Were you trapped in the rubble and had to be rescued?	Yes	No
Eske yo te pran'w amba debri?	Wi	Non
Did you witness any type of atrocity?	Yes	No
Ou te we bagay ki atros lan tranbleman te a?	Wi	Non
Did you suffer from any type of mental problem before the 2010 earthquake?	Yes	No
Ou pat jan'm gen maladi mantal anvan tranbleman te a?	Wi	Non

Appendix C

PTSD CheckList – Civilian Version (PCL-C)
Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, pick the answer that indicates how much you have been bothered by that problem *in the last month*.

No.	Response	Not at all (1)	A little bit (2)	Moderate (3)	Quite a bit (4)	Ex-treme (5)
1**.**	Repeated, disturbing *memories, thoughts, or images* of a stressful experience from the past?					
2.	Repeated, disturbing *dreams* of a stressful experience from the past?					
3.	Suddenly *acting* or *feeling* as if a stressful experience *were happening* again (as if you were reliving it)?					
4.	Feeling *very upset* when *something reminded* you of a stressful experience from the past?					
5.	Having *physical reactions* (e.g., heart pounding, trouble breathing, or sweating) when *something reminded* you of a stressful experience from the past?					

6.	Avoid *thinking about* or *talking about* a stressful experience from the past or avoid *having feelings* related to it?					
7.	Avoid *activities* or *situations* because they *remind you* of a stressful experience from the past?					
8.	Trouble *remembering important parts* of a stressful experience from the past?					
9.	Loss of *interest in things that you used to enjoy?*					
10.	Feeling *distant* or *cut* off from other people?					
11.	Feeling *emotionally numb* or being unable to have loving feelings for those close to you?					
12.	Feeling as if your *future* will somehow be *cut short*?					
13.	Trouble *falling* or *staying asleep*?					
14.	Feeling *irritable* or having *angry outbursts*?					
15.	Having *difficulty concentrating*?					
16.	Being *"super alert"* or watchful on guard?					
17.	Feeling *jumpy* or easily startled?					

Appendix D

Kreyol

PCL-C

Sou paj sa, wa p jwenn yon lis pwoblèm ak plent moun konn genyen pafwa lè y ap travèse yon moman difisil. Tanpri li yo avèk anpil atansyon epi mete yon "X" nan ti bwat la pou montre nan ki degre pwoblèm sa te deranje w nan ane apre trambelman tè Ayiti a.

1. Nan kat ane ki sot pase a, nan ki degre bagay sa yo to deranje w…

	1. Ditou	2. Yon tikras	3. Yon kou	4. Anpil	5. Anpil anpil
1. Pakèt vye *souvni*, *vye panse*, oubyen *vye imaj* de yon bagay ki te boulvèse w nan lavi					
2. Anpil vye *rèv* sou yon bagay ki te boulvèse w nan lavi a?					
3. Bridsoukou ou tonbe *aji* oswa ou *santi* tankou bagay ki te boulvèse w nan lavi a *ap pase* ankò (se tankou w ap reviv li)?					
4. Ou santi w *kontrarye anpil* lè yon evènman *fè w sonje* a bagay ki te boulvèse w nan lavi a?					
5. Ou gen *reyaksyon fizik* (tankou, batman kè, pwoblèm pou respire, transpirasyon) lè yon evènman fè w sonje a bagay ki te boulvèse w nan lavi a?					
6. Ou evite *panse* oubyen *pale de* bagay ki te boulvèse w nan lavi a oubyen evite gen *santiman* ki gen pou wè avèk li?					
7. Ou evite *kèk aktivite* oubyen *kèk sitiyasyon* paske *yo fè w sonje* de bagay ki te boulvèse w nan lavi a?					

8. Pwoblèm pou w *sonje pati enpòtan* nan bagay ki te boulvèse w nan lavi a?					
9. Ou *pa enterese ankò nan aktivite ou te konn renmen fè*?					
10. Ou santi w *aleka* oubyen ou *pèdi kontak* avèk lòt moun?					
11. Ou santi w vin *san emosyon* oubyen ou pa kapab renmen moun ki pwòch a ou menm?					
12. Ou santi kòm si ou *pap gen anpil avni devan w ankò*?					
13. Pwoblèm *pou dòmi pran w* oubyen *pou kontinye rete dòmi*?					
14. Ou santi w *akaryat* oubyen ou santi *kriz kòle*?					
15. Ou gen *difikilte pou w konsantre*?					
16. Ou santi w «*vijilan anpil*» oubyen w ap siveye oubyen w mete w sou gad ou?					
17. Ou santi w *nève* oswa ou pantan fasil?					

Appendix E

Beck's Depression Inventory

1.

0 I do not feel sad.
1 I feel sad
2 I am sad all the time and I can't snap out of it.
3 I am so sad and unhappy that I can't stand it.

2.

0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel the future is hopeless and that things cannot improve.

3.

0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.

4.

0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.

5.

0 I don't feel particularly guilty
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6.

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7.

0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.

8.

0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

9.

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10.

0 I don't cry any more than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.

11.

0 I am no more irritated by things than I ever was.
1 I am slightly more irritated now than usual.
2 I am quite annoyed or irritated a good deal of the time.
3 I feel irritated all the time.

12.

0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions more than I used to.
3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel there are permanent changes in my appearance that make me look unattractive
3 I believe that I look ugly.

15.

0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

16.

0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

18.

0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

19.

0 I haven't lost much weight, if any, lately.
1 I have lost more than five pounds.
2 I have lost more than ten pounds.
3 I have lost more than fifteen pounds.

20.

0 I am no more worried about my health than usual.
1 I am worried about physical problems like aches, pains, upset stomach, or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems that I cannot think of anything else.

21.

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I have almost no interest in sex.
3 I have lost interest in sex completely.

Appendix F

Beck Depression Inventory

Kreyol

Dat: _____ Tan Comense: _____ Tan fini: _____
Marye/pa marye: _____ Laj: _____Sex: _____
Metye: _____ Edikasyon: _____

Instructions: Kesyonè sa gen 21 gwoup fraz. Souple koute chak fraz avek anpil atansyon, e alò, chwazi fraz nan chak gwoup ki pi byen dekri jan ou te santi'w pandan 2 semèn ou sòt pase la a, rive jodi a. Si plizyè fraz nan yon gwoup sanble ka aplike egalman byen, chwazi sak pi gwo a pou gwoup sa.

1. Tris
   0 Mwen pa senti'm pa kontan.
   1 Mwen senti'm pa kontan preske toutan.
   2 Mwen pa kontan toutan.
   3 Mwen si telman pa kontan, mwen pa konnen sa pou m fè.

2. Pessimisse

   0 Mwen pa dekouraje pou demen-mwen.
   1 Mwen santi m' plis dekouraje ke mwen te ye.
   2 Mwen pa panse anyen byen pral mache pou mwen.
   3 M' santi mwen pa gen espwa anko e bagay yo p'ap change .

3. Echèk

   0 Mwen pa santi lavi'm mal pase.
   1 Mwen echwe plis que ta dwe echwe.
   2 Lè'm gade pase'm, m'we anpil echek.
   3 Kom yon moun, mwen echwe totaleman.

4. Plezi

   0 Bagay mwen renmen ban'm mem plezi ke'm toujou genyen.
   1 Bagay mwen renmen pa ba mwen mem plezi anko.
   2 Mwen pran ti kras plez pou bagay mwen renmen
   3 Bagay mwen renmen pa banm mwen plazi di tou/ anko.

5. Santi koupab/regwet

    0 M’ pa santi m’ koupab.
    1 Mwen santi mwen koupab pou tout bagay ke mwen te fè
    2 M’ santi m’ koupab preske tout tan
    3 M’ santi m’ koupab toutan.

6. Santiman de punition

    0 M’ pa santi y’ap fe’m mal.
    1 M’santi ke y’ap fe’m mal
    2 M’ap tant pou yo fe’m mal.
    3 Mwen santi y’ap fe’m mal.

7. Ray tèt ou
    0 Mwen santi menm bagay pou tet mwen.
    1 Mwen pedi konfiyans nan mwen.
    2 Mwen wont tèt mwen.
    3 M’ pa renmen tèt mwen.

8. Critike tèt ou

    0 M’ pa kritike ou blame tèt mwen plis ke dabitid
    1 Mwen kritike tet mwen plis ke dabitid
    2 Mwen kritike tet mwen pou tout move bagay mwen fe.
    3 Mwen kritike tèt mwen pou tout move bagay ki rive

9. Panse pou touye tèt ou

    0 Mwen pa anvi mouri.
    1 Mwen anvi mouri, men mwen pa tap fèl.
    2 Mwen anvi mouri, men mwen pa tap fè tèt mwen mal.
    3 Mwen anvi mouri e mwen ta touye tèt mwen si’m genyen chans.

10. Kriye

    0 Mwen pa kriye toutan.
    1 Mwen criye plis ke dabitid.
    2 Mwen criye pou nenpòt bagay.
    3 Mwen santi mwen ta criye, men mwen pa kapab.

11. Ajitasyon

    0 Mwen pa santi mwen boulvese plis ke nomalman ou fais trop movemante avek kom.
    1 Mwen santi mwen plis boulvese ko’m trop, ou fais trop movemante avek ko’m.
    2 Mwen telman boulvese ke li difisil pou mwen rete an plas.
    3 Mwen telman boulvese, ke mwen oblije ap deplase toutan pou fè yon bagay.

12. Pèdi enterè

    0 Mwen santi m pa interese en tout affair’m nomalman.
    1 Mwen santi m pa sou sa jan m te ye avan.

2 Mwen santi m pa sou sa.
3 Li difisil pou mwen sou anyen.

13. Endesizyon

0 Li pa difisil pou m pwen yon desisyon.
1 Li difisil pou mwen pwen yon desisyon jan mwen te konn fè.
2 Mwen jwen plis difikilte pou mwen pwen yon desisyon ke jan mwen te konn fè.
3 Mwen si telman gen anpil pwoblem, mwen pa fouti ka pwen yon desisyon.

14. Pa vo anyen

0 Mwen pa santi mwen pa vo anyen.
1 Mwen pa santi tet mwen vo e util ke dabitid.
2 Mwen santi mwen plis san vale ke lot moun.
3 Mwen santi mwen pa vo anyen ditou.

15. Pèdi fòs

0 Mwen gen fos kom dabitid
1 Mwen gen mwens fòs ke dabitid.
2 M' pa genyen fòs pou fè ampil bagay.
3 Mwen pa gen fos pou'm fe anyen.

16. Chanjman nan dòmi nou

0 Mwen domi nomalman.
1a Mwen domi yon ti kras plis ke dabitid.
1b Mwen domi yon ti kras mwen ke dabitid.
2a Mwen domi plis ke dabitid.
2b Mwen domi mwens ke dabitid.
3a Mwen domi preske totutan.
3b Mwen leve bone 1 e ak 2 e mwen pa kab domi anko.

17. Enèveman

0 Mwen pa neve plis ke dabitid
1 Mwen plis neve pase ke anvan
2 Mwen neve anpil anpil ke anvan
3 Mwen neve toutan

18. Chanjman nan apeti

0 Mwen pa jan'm swiv pyes chanjman na apeti mwen
1a Apeti mwen pi piti pase anvan.
1b Apeti mwen plis ke anvan.
2a Apeti mwen pi piti lontan ke anvan.
2b Apeti mwen pi plis lontanke anvan.
3a Mwen pa gen apeti.
3b Mwen anvi manje tou tan

19. Pwoblèm pou nou fikse'n

    0 Mwen ka konsantre mwen jan mwen te kon fe'l
    1 Mwen pa ka konsantre mwen kom dabitid
    2 Li difisil pou mwen fikse lespri mwen sou nenpot bagay pou anpil tan
    3 Mwen pa ka konsantre'm sous anyen

20. Fatigue

    0 Mwen pa fatigue ke dabitid
    1 Mwen santi mwen fatigue pi fasilman ke dabitid
    2 Mwen santi mwen twop fatigue pou'm fe anpil bagay jan mwen te konn fe
    3 Mwen santi mwen twop fatigue pou'm fe kek bagay jan mwen te kon fe.

21. Pèdi enterè nan fè bagay

    0 Mwen toujou djanm
    1 Mwen mwens enterese nan fe bagay ou sex
    2 Mwen pa enterese nan fe bagay ou sex
    3 Mwen pa enterese ditou nan fe bagay

Appendix G

Follow-up Questionnaire

English/Kreyol

Name/Non: _____

Date/Dat: _____

1. Have you consulted a mental health professional since you arrived in the US?
   Eske ou konsilte yon doctè tèt depi apre trambleman tè a ?

   ____Yes/Wi

   ____ No*/Non

- If No, how have you coped with the psychological symptoms you reported?
  Si se non, koman ou fè ak pwoblem w repote yo ?